Nov 27, 2013

Mark Berger (mberger@utah.gov)
Department of Air Quality
Public Comment
PO Box 144820
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Re: Brigham Young University Public comments on the State Implementation Plan (SIP).

Dear Mr. Bird,

Brigham Young University would like to make comments to the SIP plan as it affects BYU operations..

1) SIP Subsections IX.H.11. 12 and 13. Control measures for Area and Point Sources. Emission Limits and Operating Practices, PM2.5 Requirements.
Under H.13.a.i in the last sentence of the paragraph refers to the sulfur content limit of the fuel oil shall not exceed 0.015%.

> A) The limit is 15 ppm sulfur which converted over to percentage is 0.0015%. ($15ppm/10^6$)x100 = 0.0015%). This shows that the sulfur limit should be changed from 0.015% to 0.0015%.

The next comment is on the same page H.13.a.ii. It states, "Emissions to the atmosphere from the indicated emission point shall not exceed the following concentrations: 30 ppmdv (3% O_2 dry).

B. The 30 ppm NOx is an arbitrary number for which we can find no support. "The recommended RACT for Unit 4 and Unit 6 is Option 1." Using the RACT determination of Option 1 NOx values of 36 to 40 ppm are attainable.

2) RACT Evaluation Report – Brigham Young University Utah PM2.5 SIP RACT Provo Nonattainment Area.

> **"Option 1: The anticipated natural gas NOx emissions on 0.04 lb/mmBtu. The average cost per ton on NOx removed for both units is $14,923 (Unit 4 $22,264 and Unit 6 $7,581). Average reduction per boiler is 5.55 TPY NOx." (NOx reduction is** 11.1 tons.
>
> **"Selection of RACT Controls The recommended RACT for Unit 4 and Unit 6 is Option 1."**
>
> **Conclusion – Emission Reduction through RACT implementation.**
> **Unit 4 and Unit 6 will be upgraded to low NOx burner tips and FGR**

3) The RACT Summary Table has Brigham Young University listed on page 9 and under the column labeled **BACT/RACT** has the following "LNB and FGR". A review of the option 1

RACT accepted by the State clearly shows that "**Unit 4 and Unit 6 will be upgraded to low NOx burner tips and FGR.".**

> **The RACT Summary Table** should be changed to agree with the State selected RACT of option 1**.** Instead of LNB and FGR it should be changed to **LNB tips and FGR.**

4) In the **SIP RACT Limits** sent to BYU on Sept 9, 2013, there was the mistake in converting 15 ppm sulfur to a percentage value. Section a.i., the State listed 0.015% sulfur limit but the actual value should be 0.0015%.

In section a.ii emissions are listed as follows:

Source	Pollutant	lb/hr	ppmdv (3% O_2 dry)
Unit #1	NOx	5.44	30 ppm
Unit #4	NOx	7.68	30 ppm
Unit #6	NOx	7.68	30 ppm

The ppm values of 30 ppm are not supported by any calculations we have seen. It has been calculated the actual NOx emissions on Units 4 and 6 would be closer to 36 ppm. (See below)

> DAQ's proposed SIP is stated in terms of ppm (@ 3% O2, dry). 0.04 lb/MMBtu converted to ppm is 33 ppm (@ 3% O2, dry) by using EPA's conversion equations in 40 CFR 60 Appendix A, Method 19.
>
> 0.04 lb/MMBtu = 1.194E-7 x ? ppm x 8710 x 20.9 / (20.9-3)
>
> Solving for ? ppm results in 32.94 ppm @ 3% O2. In addition to the calculated 33 ppm manufacture equipment will degrade over a period of time by and estimated 10%. The actual NOx emissions rate would be 36 ppm.

Please contact Steven Zohner for questions or further information at 801-422-2804.

Respectfully,

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